WS-15A Wind Speed and Direction System
User Handbook

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Document revision summary

Issue	Date	Description
1	March 2005	Original document for use with WS-15A software version 1.1a
2	April 2005	Detail added
3	May 2005	Detail added
4	September 2005	Connection correction
5	January 2006	Audible Alarm connections
6	May 2006	Add WEEE directive caution and Audible Alarm tone settings
7a	March 2007	Add feature to switch off wind compass point display. Add caution for wiring prior to power application & installation in high winds/lightning.
8	April 2007	Add 24V DC Alarm Sounder connections
9	September 2008	Update software version to 2.2a (see Issue 1 above). Adjust orientation of Menu Flowchart

Our products are in continuous development and therefore specifications may be subject to change and design improvements may be implemented without prior notice. Please visit our web site www.r-p-r.co.uk for the most up to date information on our products.

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1. Introduction

The WS-15A display is designed to provide Data display, Alarm annunciation and RS232/485 conversion for the WindSonic range of ultrasonic anemometer sensors. It is compatible with either WindSonic1 or WindSonic 2 sensors.

WindSonic 1 sensors transmit using RS232 standard communications and are suitable when the connection distance between the sensor and the WS15A is less than 20 metres and the electrical environment is benign. For connection distances which are in excess of 20 metres, or where there may be heavy duty electrical equipment being switched or in operation in the vicinity, the WindSonic 2 sensor is appropriate, which uses the more robust RS422/RS485 communication standard.

WS15A is housed in a robust IP65 standard case with three cable glands as standard (and an optional fourth) providing access for wiring to power supply, sensor and audible alarm. As an option, an additional cable gland can be fitted for an RS232 connection to other devices such as another WS15A display, computer or data logger. A typical system configuration is shown below comprising an ultrasonic wind speed and direction sensor connected to and powered by the WS15A display connected to an audible alarm and also a data logger unit.

The system requires a 9 volt to 30 volt DC supply which can be provided by a 12 or 24 volt battery or a small plug-in mains power unit. Power requirements of the various units are included in Section 4 (Specification) of this document and associated component manuals.

Figure 1 shows a typical wind speed and direction system using the WS-15A display.

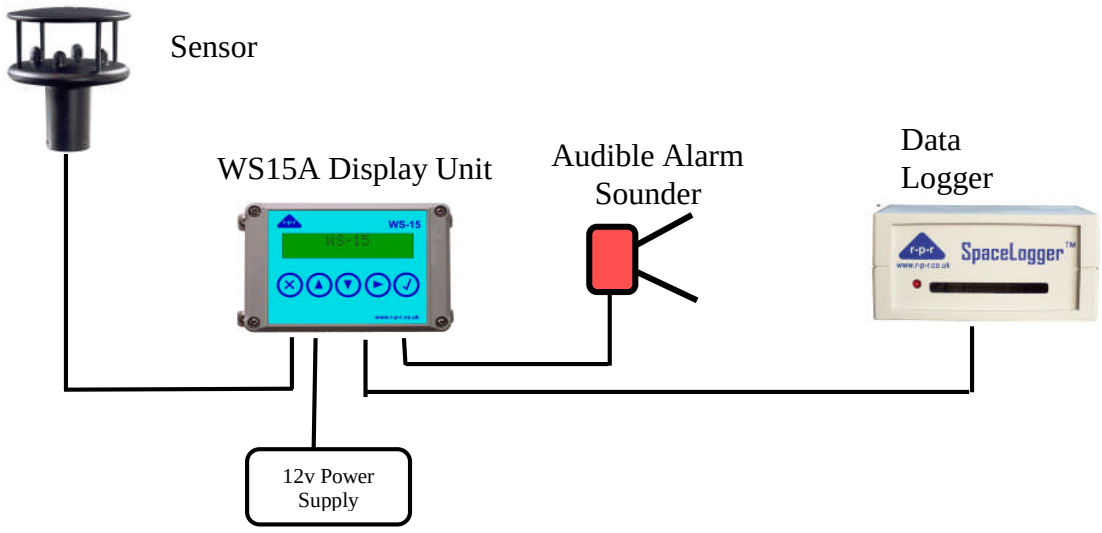


Figure 1

2. Installation

This section of the document describes the installation requirements of the display unit and audible alarm sounder. Installation instructions for the sensor are found in the WindSonic User manual supplied with the sensor. In order to ensure accurate and consistent wind data, please address particular attention to the installation guidelines section.

NB. Please note that interconnection of all components should be completed prior applying power, and that installation the WindSonic sensor and associated cabling should not be undertaken in conditions of high wind strength or risk of lightning.

Installation instructions for the SpaceLogger are to be found by visiting www.spacelogger.com.

2.1 WS-15A Location

The WS-15A is housed in an IP65 protected case designed to withstand moderate exterior weather conditions and is classed as shower proof. However, it is recommended that the unit should be installed either indoors or a sheltered area. Note that if a mains plug-in power unit is being used, it is unlikely to be suitable for an exterior location. Check the power units instructions.

The display should be mounted at eye height or angled so the user is looking directly at the display to obtain best visibility of the data display. See Figure 2 below.

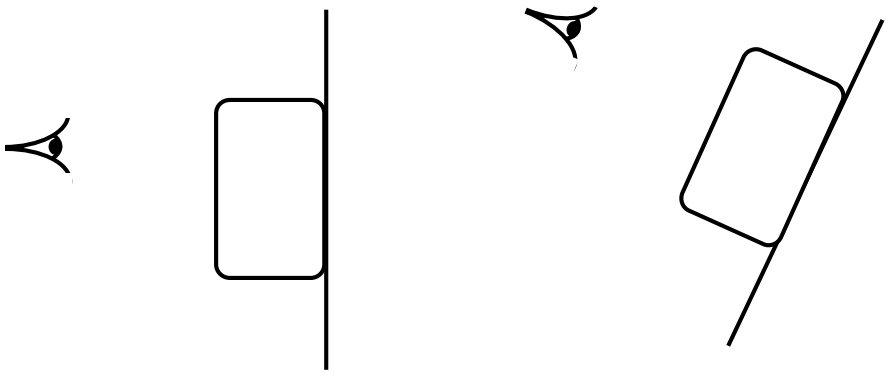


Figure 2

WS15A can be surface mounted using 4mm fixing holes in the rear of the unit or using the four mounting brackets supplied. Fixing centres and brackets are indicated in Figure 3 and Figure 4 below.

Figure 3

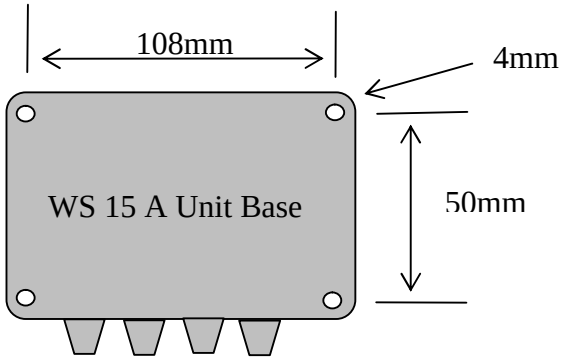


Figure 4

When the brackets are used, the 108mm and 50mm fixing centres are increased to 130mm and 68mm respectively.

2.2 Wiring

2.2.1 Cables

Users should ensure that where necessary, all cables are suitable for outside installations where necessary and should be adequately protected from potential damage from physical vibration or abrasion, excessive temperatures and aggressive atmospheric conditions.

Either solid or stranded cable is acceptable, in the range 0.32 to 0.65 mm diameter (AWG 28 to 22) with gauge 24 being ideal.

Signal cables should be routed as far as possible away from any adjacent cables or equipment which might be carrying high current or switching loads.

2.2.2 Termination Preparation

WS-15A terminals are located on the rear of the unit printed circuit board. These are convenient lever action and blocks are colour coded and numbered for ease of identification.

OrangeTerminals 1 – 3	Power input connections
White Terminals 4 – 12	Sensor power and signal connections
Yellow Terminals 13 – 19	Future communication options.
Pink Terminals 20 – 23	Alarm annunciator connections
Brown Terminals 24 – 29	Data logger connections

Terminal Strip arrangement

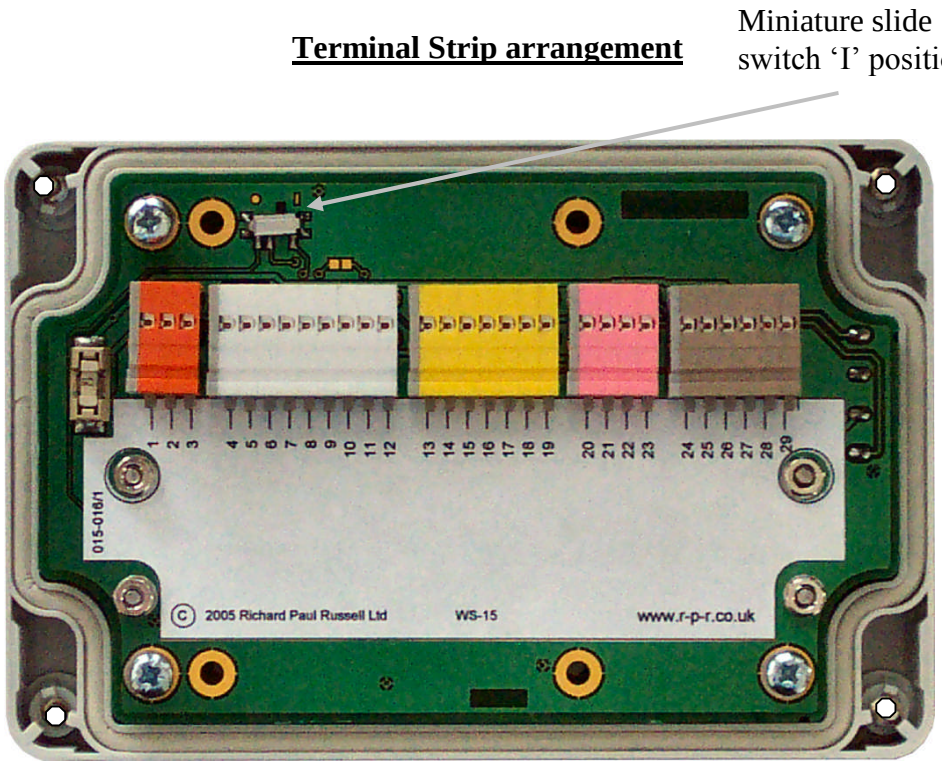


Figure 5

When the unit base has been mounted, ready for wiring, the two temporary rods supplied should be fitted to the front panel using the front panel fixing screws as shown in Figure 6.

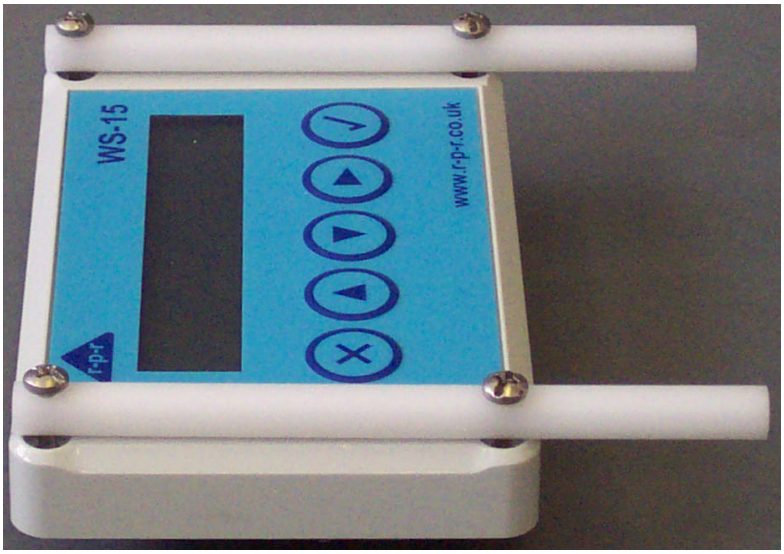


Figure 6

These rods enable the front panel to be 'slotted' into channels in the base unit, circuit board terminals upwards, thus supported to aid connection of the cores of the cables to the terminals.

Supported terminal strip ready for wiring

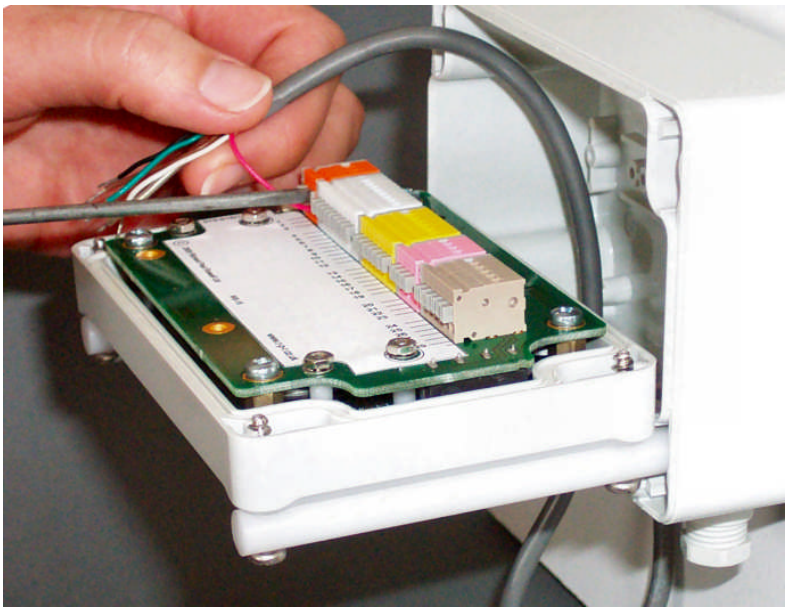


Figure 7

Wiring should be in accordance the following tables (2.2.3 and 2.2.4 or 2.2.5). These tables should be read in conjunction with Figure 5.

To ease connection, the cores should be prepared as follows:-

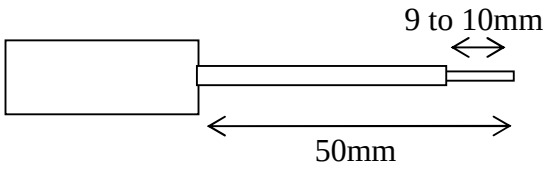


Figure 8

It is important that the stripped ends be accurately 9-10mm long to ensure good connections in the terminals. There is a 10mm gauge at the end of the red terminal block. Screens and drain wires should be sheathed.

To insert a wire into a spring terminal, first strip the insulation leaving 9 to10 mm of bare wire exposed as indicated in Figure 8

Using a small flat headed screw-driver fully depress the grey plunger for the required terminal (see Figure 7) and insert the wire as far as it will go, into the hole below the plunger. Release the grey plunger and the wire is held captive by the connector. A gentle tug on the wire will confirm that it is held firmly.

If the wire in question is multi-strand, ensure that all strands are inserted in the terminal hole.

When all cores have been fitted, carefully unscrew and remove the temporary rods and fit the front panel to the base unit.

2.2.3 Generic Terminal Allocations

Table 1

WS-15A Terminal	Signal description	Use
1	Screen	Power
2	Power GND	
3	Supply +V (+9 to 30V dc)	
4	Reserved for future use	**Wind Sensor** **See Table 2 and Table 3 on page 10 for specific RS232/RS485 connections**
5	Reserved for future use	
6	Screen	
7	Power GND (RS232 Pin 2, RS485 Pin3)	
8	+V supply output (RS232 Pin 3, RS485 Pin 2)	
9	Signal GND (RS232 WindSonic Pin 1)	
10	RS232 Rx (RS232 WindSonic Pin 5)	
11	RS485A (RS485 WindSonic Pin 5)	
12	RS485B (RS485 WindSonic Pin 4)	
13	Screen	Reserved for future use
14	Power GND	
15	+V supply	
16	RS232 Tx output	
17	RS232 Rx input	
18	RS232 output	
19	RS232 input	
20	GND	Alarm
21	+ V supply output	
22	Relay A	
23	Relay B	
24	Screen	Data Logger
25	Power GND	
26	+V supply output	
27	RS232 Rx input	
28	RS232 Tx output	
29	+5V output	

2.2.4 Connection Table for WindSonic sensor 1 using RS232

Table 2

WS-15A Terminal	Description	WindSonic
4	Reserved for future use	
5	Reserved for future use	
6	Screen	Cable screen
7	Power GND	WindSonic pin 2
8	+V supply output	WindSonic pin 3
9	Signal GND	WindSonic pin 1
10	RS232 Rx	WindSonic pin 5
11	Not used	
12	Not used	

2.2.5 Connection Table for WindSonic sensor 2 using RS485

Table 3

WS-15A Terminal	Description	WindSonic
4	Reserved for future use	
5	Reserved for future use	
6	Screen	Cable screen
7	Power GND	WindSonic pin 3
8	+V supply output	WindSonic pin 2
9	Not used	WindSonic pin 1
10	Not used	
11	RS485A	WindSonic Pin 5
12	RS485B	WindSonic Pin 4

Note: When the RS485 input is used the small slide switch near the white sensor terminals must be in the **I** position. (See Figure 5 page 4). When the RS232 input is used, the position of this switch has no significance and may be in either position.

2.2.6 Connections for Audible Alarm Sounder

Table 4

WS-15A Terminal	Description	Alarm Sounder (12V operation)	Alarm Sounder (24V operation)
20	Ground	Sounder terminal 3	Sounder terminal 1
21	+V supply output (linked to terminal 22)	n/c	n/c
22	Relay A contact (linked to terminal 21)	n/c	n/c
23	Relay B contact	Sounder terminal 4	Sounder terminal 2

***Note 1: Sounder terminal connections are to 3 and 4 for 12V dc operation, and 1 and 2 for 24V dc operation**

Note 2: Terminals 21 and 22 of the WS-15A should be linked. The circuit schematic is shown below in Figure 9.

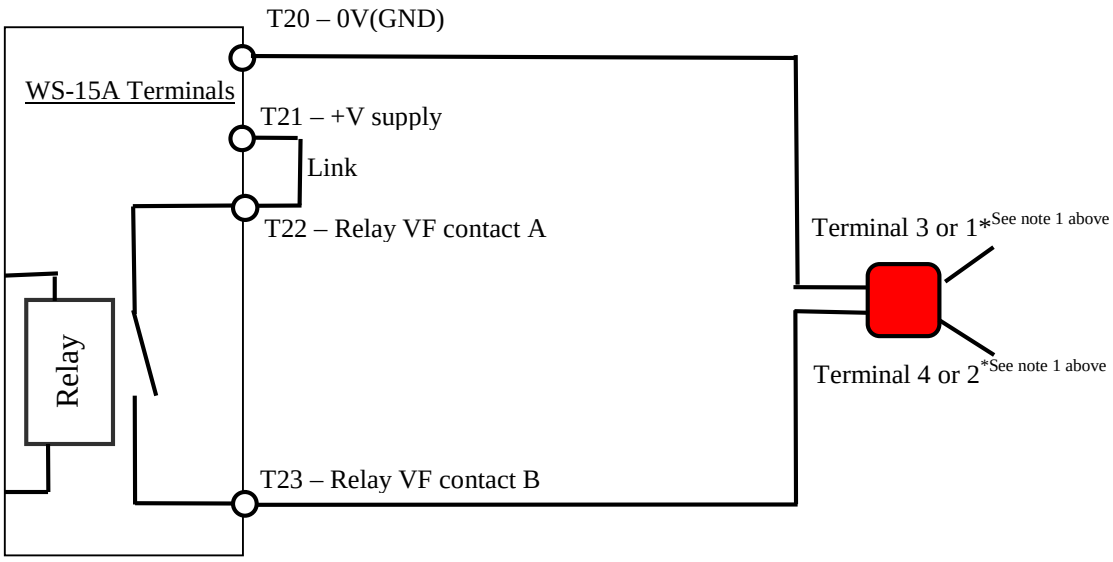

T20 – 0V(GND)
WS-15A Terminals
T21 – +V supply
Link
T22 – Relay VF contact A
Terminal 3 or 1*See note 1 above
Relay
Terminal 4 or 2*See note 1 above
T23 – Relay VF contact B

Figure 9

2.2.7 Alarm Sounder Options

The Alarm Sounder (WSALARM) supplied is prewired with a three metre lead and has adjustments for volume and tone/sequence. The pre-wired lead is set for 12V dc operation as default. If the system is to be powered using a dc source greater than 15V, the lead connections in the sounder should be changed to the 24 V dc arrangement indicated above.

By default, volume is set at the 'mid-way' position of a small potentiometer mounted on an internal printed circuit board and the tone/sequence is set up as single stage alarm producing an alternating tone of 1000hz and 800 hz every 250 msec. selected by a small switch panel similarly mounted.

Access to terminals, the potentiometer and switches can be obtained by carefully separating the two parts (front and rear) of the casing. This is best done by simultaneously squeezing the sides of the rear part, and the top and bottom of the front part. The two parts should then separate.

Note that trying to separate the parts by pulling on the sounder output orifice should not be attempted as this could damage the unit. Take care to retain the sealing rubber washer as the parts are separated.

The the printed circuit board is mounted on the front part of the unit. (See figure 10 below).

The unit has the capability of 32 different sets of alarm tone frequencies and intervals and also 2 stage alarming. WS-15A systems are single stage alarming only, but the alternative tone frequencies and intervals can be selected by these are listed in Appendix A2, and are selected using a set of 5 switches mounted on the internal printed circuit board.

When reassembling the unit, take care to correctly locate the sealing rubber washer to ensure a watertight fit, align the two parts, then gently but firmly push them together until the restraining tabs click into their slots.

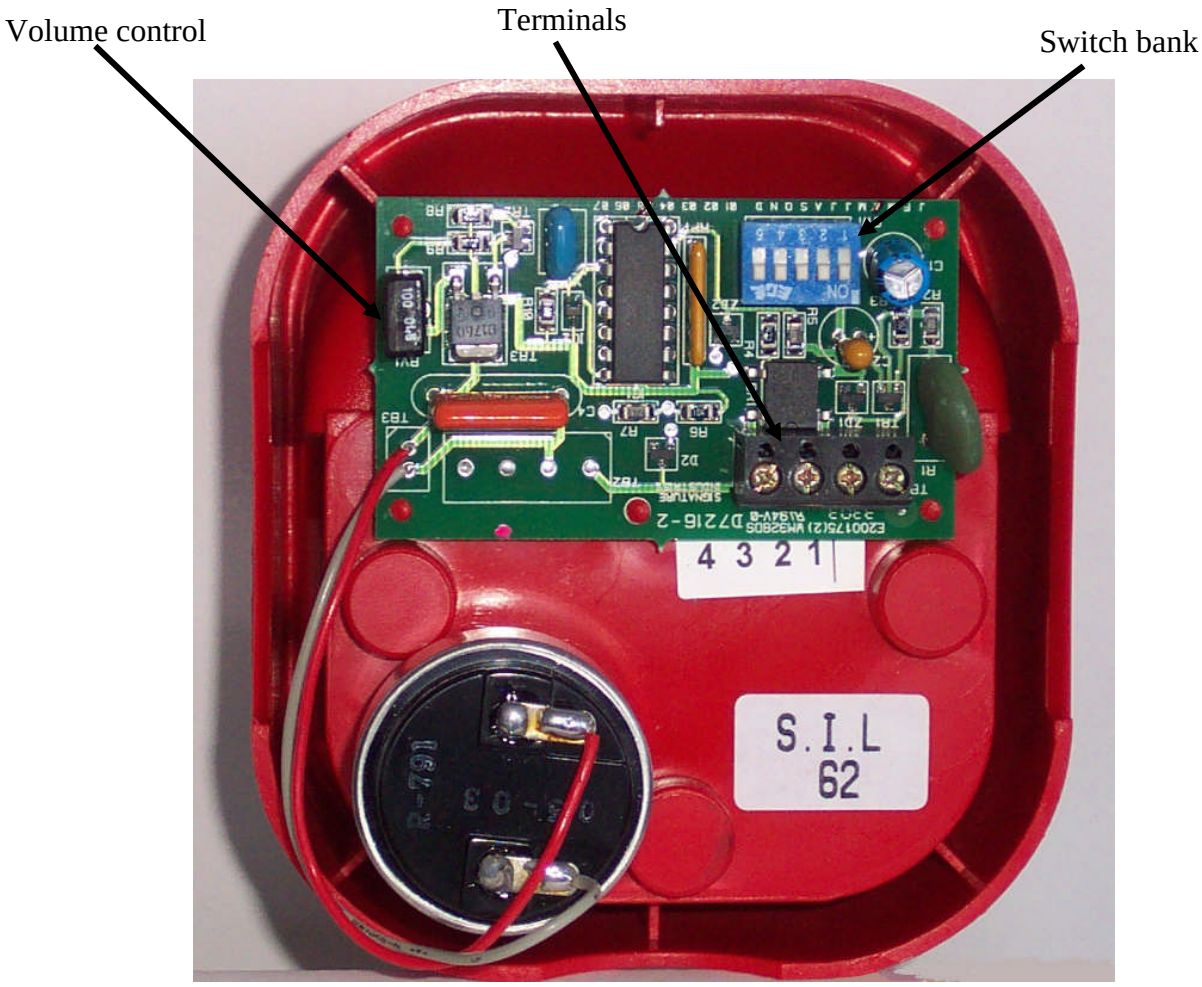


Figure10

3. Operation Procedures

Operator interaction with the WS15A is through a simple hierarchical menu system, using the 5 membrane switches on the front panel. This section should read in conjunction with the flowchart

Figure 11

From the wind display the ▲ ▼keys are used to select display settings, sensor settings or wind speed alarm and then the ► key is used to display the individual settings. On power up a screen giving the model and software version is displayed for 2 minutes or pressing any key will cause the main wind information display to be shown.

When there is an adjustable value or setting on the display this is indicated by a ⇕ symbol at the bottom right hand corner of the display. The ▲ (up) or ▼ (down) keys can then be used to make a change if required. Settings like on/off or high/low take effect as soon as they are changed.

Multi digit values like the alarm threshold or sensor alignment are adjusted a digit at a time and the ► key advances to the next digit. When the required value is obtained pressing the ✓key will enter the new value or pressing the **X** key will cancel the change.

3.1 Detailed Operation

This section describes in detail each menu item.

3.1.1 Entry at Switch On – Display

When switched on the WS 15A displays an introduction banner, listing the model and software version. By waiting 2 minutes or by pressing any key enters the wind data display.

Note that whenever displaying Wind Data, pressing the '**X**' key toggles between it and the Banner.

3.1.2 Wind Data Display

This comprises four fields

Row 1	Sensor type, Error code number
Row 2	Wind Speed, Wind direction (Numeric degrees), Wind Direction (Cardinals)

The error code number is displayed if an error condition persists continousely for 5 seconds. A list of error code numbers and their meanings is included as appendix 0

When displaying Wind Data, pressing the '**X**' key toggles between it and the model version number screen.

If no keys are pressed for 2 minutes the unit will return to the wind data display.

The main menu is cyclicly viewed by pressing either the ▲UP arrow or the ▼DOWN keys.

3.1.3 Display Settings

Units selection ▲▼keys	km/h mph kts m/s fpm

Changing the units does not affect the alarm value as this is automatically converted to the selected units.

Compass point ▲▼keys	Display of Wind Direction relative to Compass points can be switched on or off. To change the state of the display the ▲ or ▼key must be pressed. This function can be locked – see Lock Settings below.
Backlight ▲▼keys	always on always off toggle with √ key(when in Wind Data Display mode)
Contrast ▲▼ keys	Set from 0 to 9. Confirm with √
Lock Settings▲▼keys	Set lock on/off Alarm and sensor alignment settings can be locked to avoid inadvertent changes. When the lock is on the ⇕ symbol is no longer displayed by the setting and pressing the ▲ or ▼ keys has no effect.

To change the state of the lock the ▲ or ▼key must be held pressed for 5 seconds.
Note that the lock only applies to critical functions such as sensor settings and alarm level settings. It does not apply to display settings such as units, contrast and backlight.

3.1.4 Sensor Settings

Input comms. ▲▼ keys	RS232 Optical (This option is incorporated in the menu system but not yet implemented) RS485
Sensor alignment▲▼keys	sets correction factor (0 – 359) to correct for innacurate sensor installation. Note that if a value >359^{o} is entered, the correction factor is set to 000^{o} Confirm with the ✓key.
ID and Error	These are not user adjustable. The ID is the ID letter output by the sensor, usually 'Q' for a WindSonic sensor. Error is as given in 0.

3.1.5 Wind Speed Alarm

Alarm status ▲▼keys	On Off
Alarm Type▲▼keys High	Low
Alarm Value▲▼keys	Adjusts value and confirm with √
Hold Off time▲▼keys	Adjusts value and confirm with √
Hold On time▲▼keys	Adjusts value and confirm with √

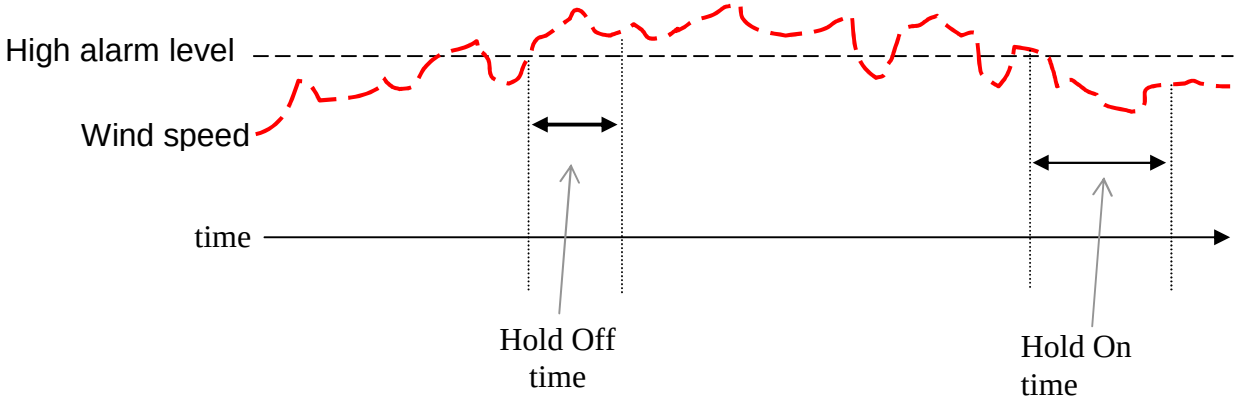
Alarm Operation

The display unit features a wind speed alarm output configurable as either a high or a low alarm. To avoid false alarm events, it also has adjustable hold off and hold on timers.

Hold off time is the time that wind speed is in the alarm state, before the alarm output is triggered, and the Hold on time is the time that the wind speed is out of the alarm state, before the alarm state is considered to be cleared. The display also has a facility to silence the alarm output once it has been triggered. From the wind data display press the ▲key and then the ✓key.

When in the alarm state the wind speed value on the wind data display will flash.

Example of high alarm operation:



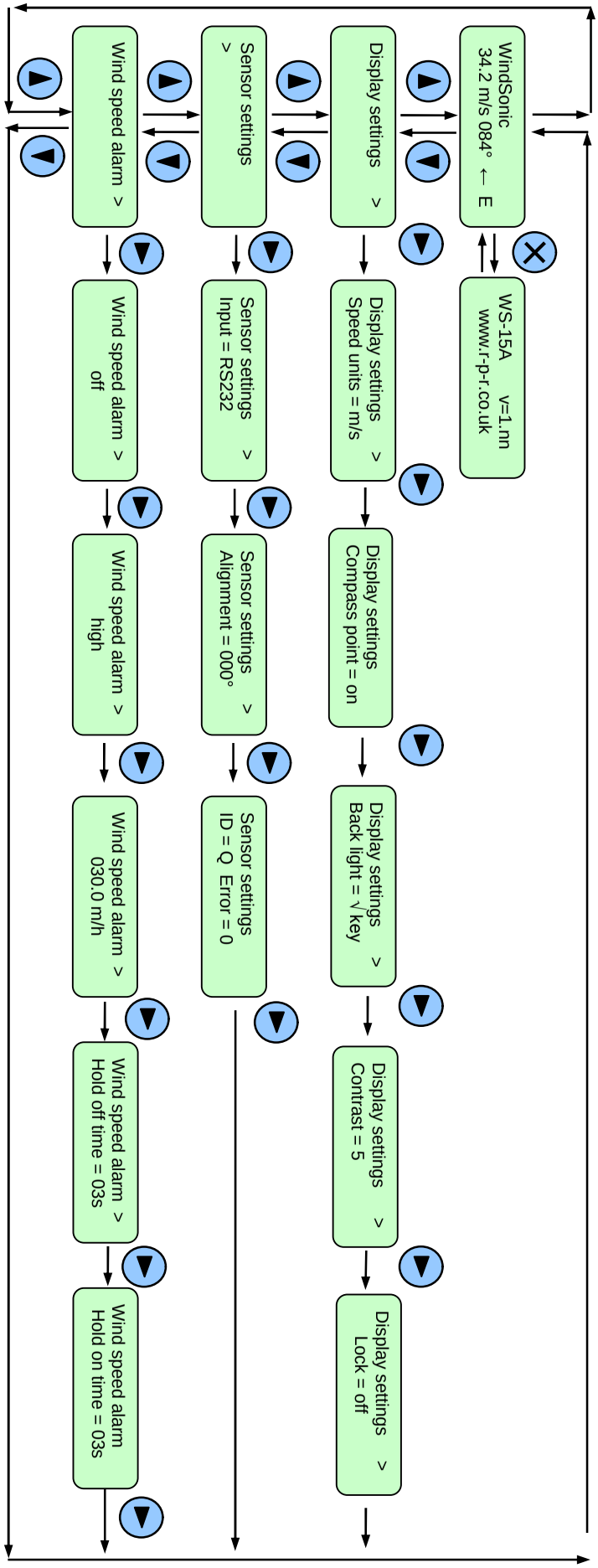

WindSonic
34.2 m/s 084° ← E
WS-15A v=1.nn
www.r-p-r.co.uk
Display settings >
Display settings
Speed units = m/s >
Display settings
Compass point = on
Display settings
Back light = √ key >
Display settings
Contrast = 5 >
Display settings
Lock = off >
Sensor settings >
Sensor settings
Input = RS232 >
Sensor settings
Alignment = 000° >
Sensor settings
ID = Q Error = 0
Wind speed alarm >
Wind speed alarm
off >
Wind speed alarm
high >
Wind speed alarm
030.0 m/h >
Wind speed alarm
Hold off time = 03s >
Wind speed alarm
Hold on time = 03s

Figure 12

4. DISPLAY UNIT SPECIFICATION

4.1 PHYSICAL

Mounting: Surface mounted.

Dimensions:

Width: 140mm (including mounting feet)
Depth: 100mm (including cable gland)
Height: 65mm

Panel Dimensions: 120mm x 80mm

Weight: 0.35kg

Material: ABS Polycarbonate blend

4.2 ENVIRONMENTAL

Operating Temperature Range: -10^{o}C to +70^{o}C

Sealing: IP65

4.3 POWER

Power requirement: 9-30Vdc

Current at 12Vdc: 20mA – 35mA (backlight on)

Supply Input protection: Polarity reversal protected and internal fuse -1 ampere slo-blo (Littelfuse type 0454001 or 0452001)

Connection: Internal lever action terminals

Wire acceptance: 0.32 to 0.65 mm diameter (AWG 28 to 22)

4.4 DISPLAY

Display: Two line 20 character dot matrix super-twist LCD with backlight

Operation: 5 keys on front of unit for menu navigation, data entry and control functions.

Functions: Wind Speed, wind direction, wind speed high/low alarm with hold on/off period, sensor alignment adjustment, contrast, backlight, sensor selection

Wind direction display: Digital 3 digits with cardinal points

Wind speed display: Digital display with units selection from kts, mph, km/h, fpm, m/s

Output: Relay driver output to sounder

4.5 I/O Capability

From Sensor: GILL proprietary Polar, Continuous

<STX>Q,DDD,SSS.SS,U,AA,<ETX>CC<CR><LF>

Where
Q is the anemometer identifier. Can be set to any character Q to Z
DDD wind direction in degrees relative to sensor axis
SSS.SS wind speed
U Units M m/s, N knots, P mph, K km per hour, F ft per min.
AA status 00 ok, 01 axis 1 failed, 02 axis 2 failed, 04 axis 1 & 2 failed, 08 NVM error, 09 ROM error
CC checksum Exclusive OR of all characters between <STX> and <ETX> as a two character hexadecimal value.
<STX> is the ASCII character with a value of 2
<ETX> is the ASCII character with a value of 3
<CR> is the ASCII carriage return character with a value of 13
<LF> is the ASCII line feed character with a value of 10

Transmission speed: 9600 Baud
Transmission standard: RS232 or RS485 (dependant on Sensor Model/connection distance)

To Other Device: An RS232 output is provided for connecting to a data logger or computer. It provides a copy of the received data stream from the sensor. This can be particularly useful in some applications when the sensor is connected using RS485 as it can eliminate the need for a separate RS485 to RS232 converter when connecting to a computer.

To Audio Sounder: Volt free relay contacts to drive an audio alarm.

Appendices

A1.Error Codes

The Wind Display screen may show an error code which are listed below:-

Error Code	Meaning	Cause	Suggested Action
00	Sensor OK		None
01	Axis 1 failed	Insufficient samples in average period on U axis	Check for possible blockage of sensor pathway.
02	Axis 2 failed	Insufficient samples in average period on V axis	Check for possible blockage of sensor pathway.
04	Axes 1 and 2 failed	As above	Check for possible blockage of sensor pathway.
08	NVM error	NVM checksum failed	Refer to R-P-R
09	ROM error	ROM checksum failed	Refer to R-P-R
10	System gain at maximum	Possible partial blockage of sensor pathway	Check for possible blockage of sensor pathway.
32	WS15A Checksum failed	Poor communications	Check WindSonic plug and terminations in WS15A enclosure Check routing of connection cable for potential interference. If using radio link, check radio operation
33	No sensor signal	No signal being received by WS15A	Check that the sensor settings input is set to the correct value for your sensor. If using the RS485 or optical input check the position of the switch above the white terminals. • = optical, **I** = RS485. Check WindSonic plug and terminations in WS15A enclosure.
34	WS15A wrong units	WindSonic not set to m/s units	Check sensor settings – see WindSonic manual

A2.Audible Alarm Tone settings

Switch settings are shown as '1' = **ON**

	Switches 1 to 5					
Tone/Frequency set	**S1**	**S2**	**S3**	**S4**	**S5**	**Tone Description**
1	**1**	**1**	**1**	**1**	**1**	Alternate 1000Hz and 800Hz 250msec
2	**0**	**1**	**1**	**1**	**1**	Alternate 3100Hz and 2500Hz 250msec
3	**1**	**0**	**1**	**1**	**1**	Alternate 1000Hz and 800Hz 125msec
4	**0**	**0**	**1**	**1**	**1**	Alternate 3100Hz and 2500Hz 125msec
5	**1**	**1**	**0**	**1**	**1**	Alternate 554Hz 100 msec with 440Hz 400msec
6	**0**	**1**	**0**	**1**	**1**	Alternate 470Hz and 430 Hz 500msec
7	**1**	**0**	**0**	**1**	**1**	Alternate 1000Hz and 800Hz 62.5msec
8	**0**	**0**	**0**	**1**	**1**	Alternate 3200Hz and 2500Hz 31.25msec
9	**1**	**1**	**1**	**0**	**1**	Alternate 554Hz and 440Hz 1 sec
10	**0**	**1**	**1**	**0**	**1**	700hz continuous
11	**1**	**0**	**1**	**0**	**1**	1000hz continuous
12	**0**	**0**	**1**	**0**	**1**	1000hz continuous
13	**1**	**1**	**0**	**0**	**1**	2300hz continuous
14	**0**	**1**	**0**	**0**	**1**	440hz continuous
15	**1**	**0**	**0**	**0**	**1**	Alternate 1000Hz and silence 1 second
16	**0**	**0**	**0**	**0**	**1**	Alternate 420Hz and silence 625msec
17	**1**	**1**	**1**	**1**	**0**	Alternate 1000Hz and silence 250msec
18	**0**	**1**	**1**	**1**	**0**	Alternate 2500Hz and silence 125msec
19	**1**	**0**	**1**	**1**	**0**	Alternate 2500Hz and silence 250msec
20	**0**	**0**	**1**	**1**	**0**	700Hz 6 secs followed by silence 12 secs
21	**1**	**1**	**0**	**1**	**0**	Alternate 1000Hz and silence 500 msec
22	**0**	**1**	**0**	**1**	**0**	Alternate 700Hz and silence 2 seconds
23	**1**	**0**	**0**	**1**	**0**	Alternate 700Hz and silence 125msec
24	**0**	**0**	**0**	**1**	**0**	720Hz for 700msec followed by silence 300msec
25	**1**	**1**	**1**	**0**	**0**	Alternate 1400Hz and silence 100msec increasing volume over 13secs
26	**0**	**1**	**1**	**0**	**0**	Ramping from 250Hz to 1200Hz and back to 250Hz over 85msec
27	**1**	**0**	**1**	**0**	**0**	Ramping from250Hz to 1000Hz over 10sec , steady for 40 secs, then ramp down to 250Hz over 10 secs
28	**0**	**0**	**1**	**0**	**0**	Three alternates of 800Hz and 1000Hz each of 500msec followed by silence 1.5 secs
29	**1**	**1**	**0**	**0**	**0**	Ramping from 420Hz to 1000Hz over 167msec
30	**0**	**1**	**0**	**0**	**0**	Ramping from 500Hz to 1200Hz over 4.5secs
31	**1**	**0**	**0**	**0**	**0**	Ramping from 2500Hz to 500Hz over 1 sec
32	**0**	**0**	**0**	**0**	**0**	Ramping from 250Hz to 1200Hz and back to 250Hz over 800msec

A3.Guarantee

System components are warranted for a period of twelve (12) months from the original date of purchase, against defective materials and workmanship. In the event that warranty service is required, please contact Richard Paul Russell Ltd.

This warranty is only valid if, when warranty service is required, a full description of the fault is provided and presented with the original invoice, and the serial number(s) on the component has not been defaced.

Richard Paul Russell Ltd's liability is limited to items of its own manufacture, and it does not accept liability for any loss resulting from the operation or interpretation of the results from this equipment.

This warranty covers none of the following:

- Periodic check ups, maintenance and repair or replacement of parts due to normal wear and tear.
- Cost relating to transport, removal, or installation of the component.
- Misuse, including failure to use the component for its normal purpose or incorrect installation.
- Damage caused by Lightning, Water, Fire, Acts of God, War, Public Disturbances, incorrect supply voltage or any other cause beyond the control of Richard Paul Russell Ltd.
- Units which have been repaired or units altered by a party other than Richard Paul Russell Ltd's employees or agents without prior written consent from Richard Paul Russell Ltd.

The Customers statutory rights are not affected by this warranty. Unless there is national legislation to the contrary, the rights under this warranty are the customer's sole rights and Richard Paul Russell Ltd shall not be liable for indirect or consequential loss or damage to any other related equipment or material.

This system and its documentation have been designed to measure, display and annunciate wind speed and direction information only, in order to assist individuals who require such data. Displayed information should not be used in isolation to make safety related decisions of any nature.

A4.Electromagnetic Conformity

EC DECLARATION OF CONFORMITY
ACCORDING TO COUNCIL DIRECTIVE
89/336/EEC

We, Richard Paul Russell Limited of New Harbour Building
Bath Road
Lymington
Hampshire SO41 3SE
United Kingdom

Declare under our sole responsibility that the product:

WS15A Display

Manufactured by: Richard Paul Russell Limited

To which this declaration relates, is in conformity with the protection requirements of Council Directive 89/336/EEC on the approximation of the laws relating to electromagnetic compatibility.

This Declaration of Conformity is based upon compliance of the product with the following harmonised standards:

Emissions EN 61326:1977
EN60945:2002

Immunity EN61326:1997

Signed by:

Richard Paul Russell – Director

Date of Issue: 18 April 2007

Place of Issue Richard Paul Russell Limited
New Harbour Building, Bath Road
Lymington SO41 3SE, UK

CE

The crossed-out wheeled bin means that within the European Union the product must be taken to separate collection at the product end-of-life. This applies to your device but also to any enhancements marked with this symbol. Do not dispose these products as unsorted municipal waste.